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# HRM System Strength and HRM Target Achievement

## – Towards a broader understanding of HRM processes

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### **Abstract:**

For some time, HRM researchers have paid attention to the process dimensions of HRM systems, especially to the question of how HRM system strength impacts on HRM outcomes. However, contributions tend to be theoretical, and empirical analyses are still rare. This paper contributes to the discussion on HRM system strength by empirically analyzing the links between HRM system strength and HRM target achievement. We differentiate between single components of strength and their partial effects on two HRM target groups: the targets focusing on employee attitudes and the targets focusing on availability and effectiveness of human resources. Findings from a German dataset with more than 1,000 observations indicate that HRM system strength has a positive influence on the average HRM target achievement. Expectations regarding the differentiated effects of single components of HRM system strength are only partially supported. Nevertheless, our analyses give reason to consider a broader conception of HRM system strength than which has been explored up to date.

**Keywords:** HRM system, HRM system strength, process approach, HRM target, target achievement

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## Introduction

Research on strategic HRM has largely focused on the *content* perspective, i.e. the question of how single HRM practices, or HRM systems as consistently designed bundles of HRM practices, affect HRM outcomes and firm performance (Jackson et al., 2014; Jiang et al., 2012) (for an overview on HRM systems approaches see, e.g., Alewell & Hansen, 2012; Kaufman, 2013; Lepak et al., 2006). Some HRM researchers have questioned this approach and have begun to focus on the *process* dimensions of HRM systems and, within this perspective, on how an HRM system's strength impacts on HRM outcomes and firm performance (e.g., Bowen & Ostroff, 2004; Ostroff & Bowen, 2000) (for an overview, see Sanders et al., 2014). Building on Bowen and Ostroff (2004), HRM system strength is usually referred to as a situation in which "unambiguous messages are communicated to employees about what is appropriate behavior" (p. 207). The general expectation is that stronger HRM systems have stronger effects on outcome variables, because they send clear signals to employees about organizational expectations (Katou et al., 2014; Sanders et al., 2014).

Several empirical studies have analyzed HRM system strength's direct effects, including employees' work satisfaction (Li et al., 2011), commitment (Sanders et al., 2008), intention to quit (Li et al., 2011), improvisation behavior (Ribeiro et al., 2011), and organizational performance (Cunha & Cunha, 2009). Furthermore, Katou et al. (2014) have shown that HRM system strength moderates the relationship between perceived HRM practices and employee reactions. Thus, HRM system strength is without a doubt a very significant concept. However, to date, empirical studies have concentrated on specific aspects, and no study has analyzed more broadly if and how HRM system strength contributes to HRM target achievement. This

is a crucial aspect for strategic HRM, since HRM targets relate to different HRM strategies and differing external and internal contexts (Jackson & Schuler, 1995; Jackson et al., 2014).

This paper seeks to close this research gap by analyzing HRM system strength's effects on HRM target achievement. Therefore, we first introduce and discuss the concept of HRM system strength. We thereby argue that HRM systems strength does not only refer to communication but also includes functional effects of HRM systems. Building on this notion we present our research hypotheses. In line with previous literature, we argue that HRM systems strength should positively influence HRM target achievement. However, besides analyzing HRM system strength's general impact, we analyze whether specific components of HRM system strength have different effects on different HRM target groups. We thereby distinguish between attitudinal HRM targets (e.g., motivation, commitment) on the one hand, and availability and effectiveness HRM targets (e.g., endowment with qualified employees, flexibility, personnel cost reduction) on the other. Building on Ostroff and Bowen (2000), we expect that the former are influenced more by an HRM system's visibility, clarity, and acceptance, while the latter should be more affected by aspects such as the consistency and full implementation of HRM practices. In addition, we also assume that the number of important HRM targets should affect HRM target achievement.

By analyzing the effects of HRM systems strength on a broad spectrum of HRM targets this study contributes to the existing literature in several ways. First, we point out that the specific components of HRM systems strength may have different effects on different groups of HRM targets, which has not been intensively analyzed so far. In particular, by including attitudinal HRM targets as well as availability and effectiveness targets, our analysis highlights that HRM system strength is not limited to communication aspects but has important functional

effects, too. For instance, fully and consistently implementing HRM practices can contribute to achieving flexibility and cost-effectiveness, independent of employees' attitudes. Second, building on this, our study provides valuable considerations related to the measurement of HRM systems strength. Finally, we furthermore discuss and analyze the role of different HRM targets for overall HRM target achievement.

## **Theoretical Background and Hypotheses**

### *The Concept of HRM System Strength*

In their seminal work, Bowen and Ostroff (Bowen & Ostroff, 2004; Ostroff & Bowen, 2000) call attention to the question of how HRM systems should be designed and administered in order to be effective. They interpret HRM systems as complex communication systems that signal significant information about strategic HRM targets and behavioral expectations to employees, and thus influence the HRM climate as shared employee perceptions about HRM. *Strong* HRM systems help to send clear signals and uniform behavioral expectations to employees, while *weak* HRM systems fail to clearly communicate these. Thus, the concept of strong HRM systems is well connected to the psychological concept of strong situations (Cooper & Withey, 2009; Mischel, 1977).

Building on social cognitive theory and Kelley's (1967) attribution theory, Bowen and Ostroff (2004) conceptualize HRM system strength based on three main elements: distinctiveness, consistency, and consensus: *Distinctiveness* is high if the HRM system's event-effect relationship is highly observable and well understood by employees. This is influenced by the HRM system's visibility and understandability as well as by the legitimacy of authority and the perceived relevance of HRM. *Consistency* is high if the event-effect relationship is the same

across differing modalities and over time; for instance, it is the same for all employees in an organization. Consistency is strengthened by instrumentality of employee behavior's consequences for targets, by validity of HRM practices for what they purport to do, and by differing hierarchy levels communicating consistent HRM messages. *Consensus* is high if there is strong agreement among individuals' views of the event-effect relationship, for instance, between line managers, HRM department members, and employees. It is influenced by agreement among principal HRM decision-makers (e.g., between line managers from differing departments) and perceived fairness in distributive, procedural, and interactional respects.

Most studies on the topic refer to this conceptualization of HRM strength (see the overview by Sanders et al., 2014). However, Ostroff and Bowen's (2000) initial work differs somewhat from the newer approach. Here, the concept of HRM system strength is embedded in a broad framework linking HRM systems to firm performance. Thereby, HRM system strength is related to the following characteristics of an HRM system:

- *Visibility*: Do employees know the HRM targets and practices?
- *Clarity*: Do employees find the information easy to understand?
- *Acceptability*: Do employees buy into the system?
- *Consistency of administration*: Are practices uniformly applied across employees and over time?
- *Effectiveness of administration and validity*: Do practices do as designed?
- *Internal consistency*: Is there a horizontal fit between practices and programs?
- *Intensity*: How much time and effort is devoted to implementing the practices?

Thus, in this conceptualization of strength, besides the requirements that employees should know, understand, and accept a system and its signals, there are additional conditions for a

system to be strong. These characteristics not only influence the perception of HRM systems, but also have an additional impact on an HRM system's functional performance, which is independent of the effect on employees. Accordingly, for our research question, the older concept has specific strengths compared to the newer concept:

First, HRM system strength as a quality of a communication system (Bowen & Ostroff, 2004) is a specific and somewhat narrower interpretation of HRM system strength than in the previous approach (Ostroff & Bowen, 2000). To clearly orientate employees by communicating employer expectations via HRM practices is an important effect of HRM systems. However, HRM systems and the HRM practices they include may influence HRM outcomes via channels other than an employer's communication (Lepak et al., 2006). For instance, an employer's control of personnel costs may heavily depend on the work contract type and on collective or individual agreements on wages and their fit. This cost control may be independent of individual employees' understandings of the correct legal content of these contracts. Thus, there is a functional aspect beyond the communicative aspect. Or, to give another example, human resource flexibility will depend on employee perceptions of the employer's flexibility signals. But independent of these perceptions, there may be other significant functional aspects resulting from the choice of contracts, binding agreements on overtime, working time restrictions, task allocation rules, and the broadness of employee skills. Thus, it seems important to broadly consider different aspects of strength besides communicative issues, rather than to neglect the functional aspects that result from consistency and full implementation of HRM practices.

A second aspect refers to the dimension of HRM targets and which of these are influenced by HRM system strength. Employee attitudes are the most important direct dependent variable in

Bowen and Ostroff's (2004) concept, since the influence of the HRM systems on employee attitudes and shared perceptions is the central focus in this approach. However, there are other HRM targets besides employee attitudes. Most prominently, the ability-motivation-opportunity (AMO) framework (Appelbaum et al., 2000; Boxall & Purcell, 2003; Lepak et al., 2006) highlights that employee ability and opportunity are important HRM targets, besides motivation. Furthermore, Osterman (1987), working on HRM system content, pointed out that companies seek to achieve flexibility, predictability, and cost-effectiveness. Gerhard (2007) also highlighted that costs are an important and independent consequence of HRM systems. However, these employers' availability and effectiveness HRM targets are not explicitly addressed in Bowen and Ostroff's (2004) concept. In this respect, the previous approach (Ostroff & Bowen, 2000) is again broader, since it can be applied to the whole spectrum of HRM targets.

In short, the strength concept as in Ostroff and Bowen (2000) is advantageous for our research question, because it does not restrict attention to an HRM system's communication properties, but allows one to focus on an HRM system in general and is compatible with a broad spectrum of HRM targets.

#### *HRM System Strength's Influence on HRM Target Achievement*

The effects of HRM system strength can be ascribed to different relationships. On the one hand, a strong situation should have a positive impact on target achievement, because it results in a clear and precise communication signal of what the employer wishes to achieve and is ready to compensate for (e.g., Bowen & Ostroff, 2004; Katou et al., 2014; Ostroff & Bowen, 2000; Sanders et al., 2014). Strong situations have a high degree of shared perceptions, which positively influences employees' attitudes and behavior: "a strong HRM system pro-



cess can enhance organizational performance owing to shared meanings in promotion of collective responses that are consistent with organizational strategic goals” (Bowen & Ostroff, 2004: 213). On the other hand, a strong situation also contributes to HRM target achievement by creating structural and operational efficiencies (Ostroff & Bowen, 2000). This argument is partially linked to the content perspective of strategic HRM research, particularly the contingency and configurational approaches (Delery & Doty, 1996; Martín-Alcázar et al., 2005). Following these approaches, HRM systems will have beneficial outcomes in terms of HR target achievement if they are i) aligned to the internal and external context and ii) are internally coherent. In addition to these notions of vertical and horizontal fit, the process perspectives focuses attention on implementation in terms of time, effort, and uniformity. In this respect, strong HRM systems should have a positive impact on HRM target achievement because all necessary practices are actually in place, are uniformly applied, and do as designed. Building on these arguments, we expect that in general HRM system strength should positively influence HRM target achievement.

*Hypothesis 1:* The higher the overall HRM system strength is, the higher the degree of overall HRM target achievement will be.

However, building on the aforementioned arguments, there are reasons to assume that different components of HRM system strength should impact differently on different HRM target types. In general, there are two different HRM target types: targets that influence employee attitudes, and human resource availability and effectiveness targets. *Key attitudinal targets* are employee motivation, commitment, and job satisfaction (e.g., Katou et al., 2014; Lepak et al., 2006). Furthermore, employers might also try to influence their employees’ orientations towards quality, innovation, or costs in order to increase performance. *Availability and effec-*

*tiveness targets* refer to the endowment with qualified employees and up-to-date knowledge, but also to flexibility in terms of working time, task allocation, or number of employees. Firms might also need to plan confidently on labor supply and its cost (Osterman, 1987). Thus, long-term employment perspectives and predictability of central HRM variables, for example labor cost, could also be important targets. Further aspects include high employee participation, high performance levels, and the reduction of personnel costs (e.g., Osterman, 1987; Lepak et al., 2006; Subramony, 2009).

Different components of HRM system strength may impact these distinctive target groups differently. For employee attitudes, employees' knowing, understanding, and accepting of HRM practices should be especially important. Bowen and Ostroff (2004) summarize employees' knowing, understanding, and accepting of HRM practices under the notion of distinctiveness. In attribution theory, distinctiveness is seen as the most critical dimension for attitudinal change (Fiske & Taylor, 1991; Kelley, 1967; see also Sanders & Yang, 2015). This is supported by the results of Sanders et al. (2008) and Li et al. (2011), who found that the analyzed attitudes (job satisfaction, commitment, intention to quit) are particularly influenced through the distinctiveness of HRM practices. The high importance of distinctiveness seems plausible, since employees can only change their attitudes if they know and understand a specific practice; and actual attitudinal change depends on how employees perceive the HRM practices, i.e. how they interpret and accept them (Nishii et al., 2008). Thus, we hypothesize that attitudinal HRM targets are more strongly influenced by those partial strength characteristics that relate to employees' knowing, understanding, and accepting of HRM practices.

*Hypothesis 2:* The elements of an HRM system's strength relating to employees' knowing, understanding, and accepting of HRM practices impact more strong-

ly on the achievement of attitudinal HRM targets than on availability and effectiveness HRM targets.

Achieving availability and effectiveness targets may depend on a lesser degree on the knowledge, understanding, and acceptance of employees. In contrast, these HRM targets should be more strongly influenced by the other characteristics of HRM systems strength (i.e. consistency of administration, effectiveness of administration, internal consistency, and intensity) as they are crucial for the structural and operational efficiencies of HRM systems. Thereby, internal consistency of HRM systems is of fundamental importance. According to Delery (1998), HRM practices can have either independent, substitutive, counteractive, or synergetic relationships. In these terms, consistency can be described as the absence of counteractive effects among HRM practices. Counteractive effects might occur if HRM practices are not implemented as intended (Wright & Nishi, 2013), or if their effects differ depending on the context in which they are implemented (Jackson et al., 2014). Accordingly, counteractive effects may only be prevented if HRM practices are applied consistently (i.e. consistency of administration) and actually do as designed (effectiveness of administration). Furthermore, even if all HRM practices are consistent, uniformly applied, and do as designed, HRM system effectiveness is not guaranteed. In the case of independent effects among HRM practices, each HRM practice adds something unique, and the use of an additional HRM practice might be necessary to achieve a certain outcome level (Chadwick, 2010). The same applies to synergistic effects, since synergies can only develop if all necessary practices are in place. Thus, time and effort devoted to full implementation of HRM practices is important for HRM systems effectiveness. Based on these arguments, we assume that the achievement of availability and effectiveness targets depends more strongly on consistency of administration, effective-

ness of administration, internal consistency, and intensity. Accordingly, we hypothesize as follows:

*Hypothesis 3:* The elements of an HRM system's strength relating to aspects of consistency of administration, effectiveness of administration, internal consistency, and intensity impact more strongly on the achievement of availability and effectiveness HRM targets than on attitudinal targets.

Besides the strength of a HRM system and its elements, the number of HRM targets that are important to an employer could also influence target achievement because the higher the number of important HRM targets, the more likely it is to miss at least some of them. The pursuit of HRM targets requires effort and resources, thus, if there are many targets it might be possible that firms might focus more strongly on individual targets at the expense of other targets, or, if several targets are pursued equally, neither one of them will be pursued effectively. In addition, some targets may conflict with others, and tradeoffs between the targets should be considered. For instance, flexibility, in terms of flexible staffing and reliance on external labor markets, and predictability of key HRM variables can be seen as conflicting targets as a high degree of flexibility reduces predictability of labor supply and costs (Osterman, 1987). Another example is the possible conflict between flexible staff adjustment and the endowment with qualified employees: qualifications might need time and a long-term perspective, which stands in contrast to flexible staff adjustment. Such conflicts could influence general target achievement because the pursuit of one target might inhibit the achievement of another target. In line with these arguments, we hypothesize as follows:

*Hypothesis 4:* The higher the number of important HRM targets, the lower the degree of HRM target achievement will be.

## **Dataset, Measurement, and Methods**

### *Dataset*

The following analysis is based on data collected via highly structured computer-aided telephone interviews with chief executives and human resource managers of firms in Germany. Because we are especially interested in the functional aspects of HRM system strength as well as HRM target achievement, responses by chief executives and HR managers are important as they are usually more knowledgeable concerning these issues (Huselid & Becker, 2000). In addition, such a research setting allows us to conduct interviews in a large number of firms with different HRM systems.

The data collection was conducted in 2012 and aimed at firms with at least 20 employees in the following sectors: chemicals and pharmaceuticals, mechanical engineering, banking and insurance, and professional services (legal and accounting services, business consultancies). Contact information was drawn from the German Chamber of Industry and Commerce database that all German firms (with the exception of craft businesses, free professions, and farms) are required by law to join. The number of randomly sampled firms in these sectors was 5,388 out of a population of 8,100 firms. Of the firms contacted, 1,175 took part in the study, which left us with a satisfying response rate of 21.8%. However, a first analysis of the data revealed that 76 firms did not meet the selection criteria (size and industry) or gave invalid answers. Thus, usable data is available for 1,099 firms. For the analysis in this paper, we further excluded all cases with missing information in our central variables, namely HRM system strength, importance of HRM targets, and target achievement (see below). The final sample therefore contains 1,009 firms.

Our sample data did not reflect the population distribution in terms of sectors (original distribution in parenthesis): 23.9% (16.0%) chemicals and pharmaceuticals, 24.7% (51.8%) mechanical engineering, 28.0% (18.0%) banking and insurance, and 23.3% (14.2%) professional services. We therefore used a standard weighting adjustment (Bethlehem, 2009) to approximate the sample data to population proportions.

The questionnaire acknowledged that firms might operate multiple HRM systems in one organization. If firms stated that they differentiate their HRM for different employee groups, all questions related to HRM referred to the employee group that is most important for the firm's economic success (as suggested by Osterman, 1987; see also Delery & Doty, 1996). If HRM was not differentiated for different employee groups, questions were formulated such that they encompassed all of a firm's employees. Thus, each firm is represented with its most important HRM system in terms of the value production of the employees working under this system.

### *Measuring Strength*

Concerning our central independent variable, HRM system strength, we follow Ostroff and Bowen (2000) in formulating our items. Respondents were asked to indicate to what extent different statements applied (see Table 1). Items were presented in random order. Response categories ranged from 1 = *does not apply at all* to 5 = *fully applies*. Single items were used in order to have a simple measurement instrument that applies to different organizational contexts.

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TABLE 1 ABOUT HERE

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### *Measuring the Average Achievement of Important HRM Targets*

Our dataset contains a number of items on the importance of different HRM targets and on HRM target achievement. Six of these targets relate to *employee attitudes*: (1) high employee motivation, (2) high employee commitment, (3) high employee job satisfaction, (4) strong quality orientation of employees, (5) strong innovation orientation of employees, and (6) strong cost orientation of employee. Another 10 targets relate to *availability and effectiveness of human resources*: (7) good endowment with qualified personnel, (8) endowment with up-to-date knowledge, (9) high flexibility in terms of working time, (10) high flexibility in terms of task allocation, (11) flexible adjustment of workforce to personnel requirements, (12) long-term employment perspectives, (13) predictability of key HRM variables, (14) high employee participation, (15) high performance levels, and (16) reduction of personnel costs.

Respondents were asked to indicate the importance attributed to, as well as the level of achievement, of each of these 16 targets in their organization. Concerning the importance of different HRM targets, answers could be chosen from 1 = *very unimportant* to 5 = *very important*. Concerning target achievement, respondents were asked to state, for each target, their degree of approval to a preformulated statement expressing full (positive) HRM target achievement (e.g., Our payroll costs are very low), with the response categories ranging from 1 = *does not at all apply* to 5 = *fully applies*.

Based on this information, we created indices for the *average achievement of important HRM targets*. Therefore, we first created dummy variables for importance of targets. These dummy variables contain the information whether a specific HRM target is important (original values 4 or 5; dummy = 1) or not (original values 1 to 3; dummy = 0). In a second step, these importance dummies were multiplied with the target achievement values. Target achievement is

thus accounted for only if a specific HRM target is important to a firm. In the last step, these values were added up for all HRM targets per firm, and then divided by the total number of important HRM targets in that firm. This gives us a value for the average achievement of important HRM targets. Following this procedure, three different indices were created: one for the average achievement of important HRM targets (out of all 16 targets), one for the average achievement of important attitudinal HRM targets (out of the 6 attitudinal targets), and one for the average achievement of important availability and effectiveness HRM targets (out of the 10 targets).

### *Measurement of Control Variables*

Several control variables were included. First, we controlled for firm size and firm age because large firms have usually more resources in order to achieve their targets (De Winne & Sels, 2013) and the full implementation of HRM systems requires time (Paauwe & Boon, 2009). To consider a firm's external context (Jackson & Schuler, 1995; Jackson et al., 2014), we included industry, strong order fluctuations (yes/no), and pressure of competition (response categories ranging from 1 for non-existent to 5 very high). Furthermore, as the HR department's role and the HRM task types fulfilled by it might affect HRM target achievement (Guest & Bos-Nehles, 2013), we also controlled for the endowment of the HR department (number of FTE per employee in the personnel department), the strategic orientation of HRM (yes/no), and the use of differentiated HRM for different employee groups (yes/no). Finally, to control for institutional influences (Jackson et al., 2014), we included the existence of collective employee representation (works council and other forms/works council only/other forms only/none), and collective bargaining agreements (binding legal commitment to/orientation on collective bargaining agreements/none). Since our questionnaire focused on



HRM and its effects and already contained many questions, control variables were operationalized quite simply in order not to further increase the complexity for interviewees. Thereby, the use of dummy variables seemed a good solution, as they are commonly used in strategic HRM research (Heavey et al., 2013).

### *Method*

To test HRM system strength's influence on HRM target achievement, we estimated linear regressions with our three indices as different dependent variables. In each case, we first calculated a basic model that included only the control variables, and a full model that also incorporated the HRM system strength variables as well as one variable for the respective number of important HRM targets.

To examine the chosen method's appropriateness, we conducted several tests (Hair et al., 2010). To test for multicollinearity, we referred to variance inflation factors (VIFs), which all remain below 2.1 and thus below the recommended threshold of 10. We used residual plots (studentized residuals) to evaluate the normality of residuals (linearity, homoscedasticity, independence). Thereby, two outliers were detected. After excluding these cases from the analyses, plots did not indicate any nonnormality problem. Finally, we also used normal probability plots to test the normality of the error term distribution. Again, no problems were identified.

## Results

### *HRM System Strength*

On average, our respondents characterized the HRM systems in their firms as moderately strong: average values for the single strength items are between 3 and 4, indicating a neutral to slightly positive characterization of HRM system strength.

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TABLE 2 ABOUT HERE  
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### *Importance of HRM Targets*

On average, by naming 11.7 out of 16 HRM targets, respondents characterized a relatively high number and broad mix of HRM targets as important or very important to their firm. With the exception of the targets reduction of personnel cost and flexible adjustment of workforce to personnel requirements, all other targets were considered important by more than 50% of respondents. Furthermore, the HRM targets related to employee quality awareness, motivation, performance levels, job satisfaction, long-term employment perspectives, employee commitment, and good endowment with qualified employees were characterized as important by 90% or more of respondents.

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TABLE 3 ABOUT HERE  
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### *HRM Target Achievement*

Table 4 presents descriptive results for the achievement of important HRM targets. The results reflect that, on average, firms have achieved most of the important HRM targets but that there is still work to be done. There is a comparatively high degree of approval for target achievement regarding employment security, employee commitment, endowment with qualified personnel, quality orientation of employees, and performance. A comparatively low approval for target achievement can be found for personnel costs and the ability to adjust the number of employees.

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TABLE 4 ABOUT HERE  
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### *Results of the Regressions*

The regression analyses results are presented in Table 5. Concerning our control variables, we find strong effects for industry and order fluctuations. For firm size, we see partial effects. No effects could be found for firm age, pressure of competition, endowment of HR department, HRM's strategic orientation, differentiated HRM, employee representation, and collective bargaining agreements.

Hypothesis 1 – which assumes that the higher the overall HRM system strength, the higher the degree of achievement of HRM targets – is partially supported by our results: five out of seven HRM system strength items show a positive relationship with average target achievement. Internal consistency of HRM practices shows the strongest effect, followed by acceptability, effectiveness of administration, and clarity. Consistency of administration has a comparatively weak effect. No effect can be found for visibility of the system and intensity.

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TABLE 5 ABOUT HERE

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Hypotheses 2 and 3 are also only partially supported by the data. Concerning Hypothesis 2, the effect of visibility, clarity, and acceptability should be stronger for the attitudinal HRM targets than for the availability and effectiveness targets. However, this is only true for the HRM system's clarity and acceptability. For visibility, the relationship is reciprocal and not significant which is against Hypothesis 2. The results for Hypothesis 3 are similarly inconclusive. Here, the effects for the strength items relating to consistency of administration, effectiveness of administration, internal consistency, and intensity should be stronger for the availability and effectiveness targets than for the attitudinal HRM targets. This holds only for internal consistency and intensity. The results for the two other items (consistency of administration, effectiveness of administration) point in the opposite direction.

Finally, hypothesis 4 states that the number of important HRM targets should lower the degree of HRM target achievement. Our findings show a significant negative effect of the number of important HRM targets on the achievement of important availability and effectiveness targets. This indicates that the achievement of availability and effectiveness targets is reduced if firms try to achieve many HRM targets at the same time because several targets require higher levels of effort and resources and bear the risk of tradeoffs between the targets. However, no effects could be found for overall target achievement and the achievement of important attitudinal HRM targets. Accordingly, Hypothesis 4 is only partially supported since we have assumed that there should be a general effect, i.e. the effect should not be limited to specific target groups.

## Discussion & Conclusion

Our findings show that HRM system strength influences HRM target achievement in a significant and positive way. This is in line with results from previous empirical research on HRM system strength's influence on specific variables such as overall organizational performance, job satisfaction, and organizational commitment (e.g., Cunha & Cunha, 2009; Li et al., 2011; Ribeiro et al., 2011; Sanders et al., 2008). Since we base our study on a large sample of German firms in different industries, our results may be generalized for firms with different organizational contexts and with differing HRM system contents. Hence, our findings strongly support the relevance of the overall concept of HRM system strength. By focusing on the impact of HRM systems on HRM target achievement, our analyses make three main contributions to the field.

First, in our view, research on HRM processes should take a broader conception of HRM system strength. To date, the process perspective has largely focused on the question of how employees understand and respond to HRM (Sanders et al., 2014). However, our findings have shown that HRM systems not only serve to communicate organizational goals and expectations but also have an additional functional impact. Understanding the psychological processes through which employees give meaning to HRM is crucial to assess the effects of HRM systems (Guest, 2011). However, to fully capture how HRM systems influence performance, we need to also consider the functional effects. These functional effects are grounded in the long-debated content-oriented perspectives of strategic HRM research (Delery & Doty, 1996; Martín-Alcázar et al., 2005). Here, our findings have shown that the strongest effect on overall target achievement stems from internal consistency in HRM practices, supporting the notion of synergistic effects within HRM systems (e.g., Guthrie et al., 2009; Subramony, 2009;

Lepak et al., 2006). The process-oriented perspective also draws further attention to the questions of whether all practices are uniformly applied, if they do as designed and if they are actually in place. All these aspects have shown a significant impact on at least one of our indices supporting their relevance. To disentangle the communication and functional effects, we hypothesized that an HRM system's elements of strength related to employees' knowing, understanding, and accepting HRM would impact more strongly on the achievement of targets related to employee attitudes than on other HRM targets (Hypothesis 2). In contrast, we expected that the elements of HRM system strength relating to consistency and full implementation would impact more strongly on the achievement of employers' non-attitudinal effectiveness and availability targets (Hypothesis 3). Both hypotheses were only partly supported. Since we did not hypothesize that the effects are exclusive but only differ in their magnitude, a possible explanation for these findings is that the effects of the different components of HRM system strength are more interrelated than expected. Bowen and Ostroff (2004) have pointed out that aspects such as internal consistency among the HRM practices and validity are necessary in order to avoid ambiguous communication. Accordingly, communication not only depends on employees' knowing, understanding, and accepting of HRM. In contrast, structural and operational efficiencies of HRM systems – i.e. the more functionally orientated effects of HRM system strength – might also depend on employee attitudes. Thus, for a comprehensive understanding of HRM system effects, both communication and functional properties of HRM systems must be taken into account.

Closely related to this is our second consideration on measuring HRM system strength. In the meantime, Delmotte et al. (2012) have developed reliable and valid scales to measure HRM system strength, and other researchers may follow their example, in order to better test HRM

system strength's effects. Against the background of our study, we suggest including both the communication and functional properties of HRM systems in future measurement models in order to develop a comprehensive picture of HRM system strength. Thereby, it should be considered that the functional properties of HRM systems might only be assessable on an aggregated level. In other words, individual employees might not know if an HRM system is fully implemented or if the practices do as intended. Furthermore, HRM system strength refers to meta-features of HRM systems. Measures of HRM system strength should therefore be easy to apply in different settings (Delmotte et al., 2012; Sanders et al., 2014). For instance, references to specific HRM practices (e.g., internal promotion, performance-oriented pay) should be avoided, because it is not guaranteed that firms actually use these practices.

Third, we were able to show that the achievement of HRM targets partially depends on the number of HRM targets. In Hypothesis 4, we assumed that the number of HRM targets might be of influence, because a broad spectrum of HRM targets as well as potential conflicting targets might hinder HRM target achievement. This assumption was supported for the achievement of important availability and effectiveness targets but not for the achievement of attitudinal targets. Given this result, we conclude that attitudinal targets might be easier to integrate than availability and effectiveness targets. Concerning the latter, Osterman (1987) has already pointed out that some HRM goals might conflict, and our results further support the notion, that this could indeed be the case.. In our view, this is not a trivial point, given the recent calls for a broader, multiple-stakeholder conceptualization of HRM and performance (e.g., Paauwe, 2009). In this perspective, HR executives might find themselves confronted with contradictory demands. Ultimately, this could lead to weak HRM systems, since it is impossible to configure HRM systems to simultaneously maximize a wide variety of targets

(Chadwick, 2010; Delery, 1998). The pursuit of selected targets might thus be favorable in terms of HRM system strength and HRM target achievement.

Our findings have some clear practical implications. First, our findings highlight the influence of HRM system strength on key attitudinal targets. Thus, if firms intend to achieve attitudinal change through measures of HRM, they should ensure that all employees know, understand, and accept the various HRM practices. Thereby, the employees' knowing and understanding could for instance be increased via regular information about new practices via email, intra-net, or direct communication. However, most important for an attitudinal change is the actual acceptance by employees, which requires a high degree of empathy and sensitivity for employees' values and goals. In contrast, to achieve availability and effectiveness targets, firms should pay special attention to internal consistency, because HRM systems can only be effective if there are no substitutive and counteractive effects among HRM practices. A high degree of effectiveness also requires that all necessary practices are implemented and do as designed. Both aspects might be challenging: the implementation of HRM practices requires time, effort, and resources; and the actual effects might only be revealed after HRM practices are implemented. Overall, our results indicate that the different components of HRM system strength are closely interrelated. Accordingly, firms should keep a close eye on all the aspects of HRM system strength in order to achieve attitudinal changes or important availability and effectiveness targets. Finally, we have also pointed out that too many targets might affect overall target achievement. Accordingly, firms should also pay attention to the question which targets they are actually pursuing and how these targets are related to each other.

Our results and conclusions should be interpreted against the background of some limitations, which also point to possible avenues for future research. The analyses are based on interviews



with chief executives and HR managers. Thus, we cannot for instance determine the actual acceptance of HRM practices among employees but must rely on our respondents' subjective assessments. This could be an issue, especially for those HRM system strength items that represent employee-related characteristics of strength, i.e. employees' knowing, understanding, and accepting of HRM practices. In addition, answers could be influenced by social desirability. Accordingly, future research should also integrate employees' perceptions. Thereby, a multilevel and multiperson approach in data collection seems promising, given the multidimensional nature of HRM system strength (Wright & Boswell, 2002; Wright & Nishi, 2013). Furthermore, concerning the measures applied, we used only single items to measure the different dimensions of HRM system strength. This seems justifiable for a first attempt to analyze the relationships between HRM system strength and HRM target achievement, since we focus on single components that are fairly concrete rather than abstract (for a discussion on single-item vs. multi-item measures, see e.g., Bergkvist & Rossiter, 2007; Sarstedt & Wilczynski, 2009). However, future research should improve on this aspect. Regarding the measurement of HRM targets, we only captured how important different targets are and to what extent each target was achieved. As the issue of conflicting targets seems to be important for overall HRM target achievement, future research could benefit from analyzing more deeply which HRM targets are indeed conflicting and how the pursuit of conflicting HRM targets effects overall target achievement. Furthermore, some control variables were measured fairly simply (e.g., HRM's strategic orientation). Future research should thus incorporate more sophisticated measures to account for different contexts. Finally, we asked a large number of firms about the characteristics of one of their HRM systems. Our results thus relate to fairly different HRM systems and are not confined to a special HRM system type. However, we cannot exclude the possibility that the relationship between HRM system strength and

HRM target achievement depends on HRM system content (see Katou et al., 2014; Mossholder et al., 2011). Thus, future studies should also integrate the content perspective and its influence on HRM target achievement.

In conclusion, our study highlights the importance of HRM system strength for HRM target achievement. By addressing a great variety of HRM targets, our analyses substantiate a broader conception of HRM system strength. HRM systems not only serve to communicate, but also have important functional effects which also depend on the processes of HRM systems. Thus, a holistic understanding of HRM system effectiveness can only be achieved if both communication and functional properties of HRM systems are considered. In addition, we have also pointed out that a large number of important HRM targets might lower the degree of HRM target achievement.

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## Appendix

### A1: Descriptive Statistics and Correlations

|  | Mean | SD    | 2    | 3    | 4    | 5    | 6    | 7    | 8    | 9    | 10   |
|--|------|-------|------|------|------|------|------|------|------|------|------|
| 1. Average achievement of important HRM targets                            | 3.84 | 0.427 | .876 | .904 | .343 | .375 | .365 | .293 | .328 | .380 | .300 |
| 2. Average achievement of important attitudinal HRM targets                | 3.86 | 0.507 |      | .596 | .297 | .355 | .337 | .291 | .301 | .314 | .263 |
| 3. Average achievement of important availability and effectiveness targets | 3.84 | 0.445 |      |      | .316 | .317 | .313 | .225 | .268 | .354 | .269 |
| 4. Visibility  | 3.52 | 0.910 |      |      |      | .570 | .477 | .370 | .415 | .411 | .410 |
| 5. Clarity   | 3.47 | 0.820 |      |      |      |      | .495 | .397 | .364 | .365 | .357 |
| 6. Acceptability   | 3.64 | 0.739 |      |      |      |      |      | .328 | .326 | .352 | .309 |
| 7. Consistency of administration   | 3.76 | 0.915 |      |      |      |      |      |      | .325 | .363 | .300 |
| 8. Effectiveness of administration   | 3.58 | 0.705 |      |      |      |      |      |      |      | .346 | .334 |
| 9. Internal consistency  | 3.28 | 0.834 |      |      |      |      |      |      |      |      | .430 |
| 10. Intensity  | 3.32 | 0.923 |      |      |      |      |      |      |      |      |      |

Note: All correlations are significant at the 0.1% level.

**Table 1: Measurement of HRM System Strength**

| <b>Ostroff &amp; Bowen (2000)</b> | <b>Our items</b>  |
|-----------------------------------|---|
| Visibility                        | Employees know the HRM targets and practices.                                       |
| Clarity                           | Employees understand HRM targets and practices.                                     |
| Acceptability                     | Employees accept HRM targets and practices.   |
| Consistency of administration     | HR personnel and executive managers follow the same guidelines in implementing HRM. |
| Effectiveness of administration   | We realize the effects we intend to achieve with our HR practices.                  |
| Internal consistency              | All HR practices are consistent with one another.                                   |
| Intensity                         | We invest heavily in the full implementation of our HR practices.                   |

**Table 2: HRM System Strength**

|                                 | <b>Mean</b> | <b>Standard deviation</b> |
|---------------------------------|-------------|---------------------------|
| Visibility                      | 3.52        | 0.910                     |
| Clarity                         | 3.47        | 0.820                     |
| Acceptability                   | 3.64        | 0.739                     |
| Consistency of administration   | 3.76        | 0.915                     |
| Effectiveness of administration | 3.58        | 0.705                     |
| Internal consistency            | 3.28        | 0.834                     |
| Intensity                       | 3.32        | 0.923                     |

Note: n = 1,009; response categories range from 1 = *does not apply at all* to 5 = *fully applies*.

**Table 3: Importance of HRM Targets**

|   | HRM target   | Mean | Standard deviation |
|---|--|------|--------------------|
| <b>Employee attitude targets</b>              | High employee motivation                                   | 0.95 | 0.220              |
|   | High employee commitment                                   | 0.90 | 0.301              |
|   | High employee job satisfaction                             | 0.92 | 0.268              |
|   | Strong quality orientation of employees                    | 0.96 | 0.193              |
|   | Strong innovation orientation of employees                 | 0.62 | 0.487              |
|   | Strong cost orientation of employees                       | 0.58 | 0.494              |
| <b>Availability and effectiveness targets</b> | Good endowment with qualified employees                    | 0.95 | 0.218              |
|   | Endowment with up-to-date knowledge                        | 0.83 | 0.377              |
|   | High flexibility in terms of working time                  | 0.67 | 0.470              |
|   | High flexibility in terms of task allocation               | 0.60 | 0.489              |
|   | Flexible adjustment of workforce to personnel requirements | 0.42 | 0.493              |
|   | Long-term employment perspectives                          | 0.90 | 0.294              |
|   | Predictability of key HR variables                         | 0.54 | 0.499              |
|   | High employee participation                                | 0.51 | 0.500              |
|   | High performance levels                                    | 0.92 | 0.274              |
|   | Reduction of personnel costs                               | 0.38 | 0.487              |

Note: n = 1,009; dummy-coded variables with 1 = *target is very important or important* and 0 = *target is not important at all, unimportant, or neither important nor unimportant*.

**Table 4: Average Achievement of Important HRM Target Achievement**

|   | HRM target  | Mean | Standard deviation |
|---|---|------|--------------------|
| <b>Employee attitude targets</b>                  | Employees are highly motivated.                                   | 3.95 | 0.684              |
|   | Employees show high commitment.                                   | 4.25 | 0.648              |
|   | Employees show high job satisfaction.                             | 3.67 | 0.661              |
|   | Employees are highly quality oriented.                            | 4.03 | 0.671              |
|   | Employees are highly innovation oriented.                         | 3.65 | 0.807              |
|   | Employees are highly cost oriented.                               | 3.48 | 0.720              |
| <b>Availability and effectiveness HRM targets</b> | Endowment with qualified employees is good.                       | 4.10 | 0.666              |
|   | Employees have up-to-date knowledge.                              | 3.91 | 0.656              |
|   | Personnel allocation is very flexible concerning working time.    | 3.95 | 0.790              |
|   | Personnel allocation is very flexible concerning task allocation. | 3.69 | 0.701              |
|   | Number of employees can be adjusted easily.                       | 3.24 | 0.999              |
|   | Employees have long-term employment perspectives.                 | 4.43 | 0.688              |
|   | Key HR variables are highly predictable.                          | 3.38 | 0.882              |
|   | Employee participation is high.                                   | 3.68 | 0.692              |
|   | Employees show high performance.                                  | 4.03 | 0.640              |
|   | Personnel costs are low.  | 2.82 | 0.955              |

Note: Response categories range from 1 = *does not apply at all* to 5 = *fully applies*.

**Table 5: HRM System Strength and HRM Targets Achievement**

|   | Average achievement of important HRM targets |              | Average achievement of important attitudinal HRM targets |              | Average achievement of important availability and effectiveness HRM targets |              |
|---|--|--------------|--|--------------|---|--------------|
|   | (basic model)                                | (full model) | (basic model)  | (full model) | (basic model)   | (full model) |
| <b>Firm size</b> (ref. 20 to 49)  |  |              |  |              |   |              |
| 50 to 99  | -.039  | -.073*       | -.045  | -.070*       | -.026   | -.059        |
| 100 to 499  | -.006  | -.019        | -.028  | -.040        | .005  | -.012        |
| 500+  | -.012  | -.015        | -.033  | -.034        | -.001   | -.011        |
| <b>Firm age</b>   | .015   | .052         | .002   | .027         | .027  | .062         |
| <b>Industry</b> (ref. mechanical engineering)   |  |              |  |              |   |              |
| Chemicals and pharmaceuticals   | .004   | -.026        | .006   | -.017        | -.001   | -.028        |
| Banking and insurance   | -.080*                                       | -.137***     | -.074  | -.117**      | -.085*  | -.145***     |
| Professional services   | .134***                                      | .092**       | .077   | .041         | .152***   | .110**       |
| <b>Strong fluctuations in order position</b> (yes)  | -.142***                                     | -.112***     | -.122***   | -.094**      | -.153***  | -.117***     |
| <b>Pressure of competition</b>  | -.043  | -.030        | -.014  | -.007        | -.043   | -.019        |
| <b>Endowment of HR department</b>   | .041   | .030         | .048   | .041         | .027  | .019         |
| <b>Strategic orientation of HRM</b> (yes)   | .071*  | -.026        | .080*  | -.007        | .056  | -.016        |
| <b>Differentiated HRM</b> (yes)   | .076*  | .040         | .068*  | .039         | .064  | .025         |
| <b>Existence of employee representation</b> (ref. none)   |  |              |  |              |   |              |
| Works council and other forms   | -.017  | -.013        | -.003  | .000         | -.037   | -.019        |
| Works council only  | .019   | .006         | .019   | .012         | .004  | .000         |
| Other forms only  | .081*  | .028         | .109**   | .060         | .027  | -.015        |
| <b>Collective bargaining agreements</b><br>(commitment to or orientation on collective bargaining agreements) | -.001  | -.033        | .016   | -.009        | .002  | -.030        |
| <b>HRM system strength</b>  |  |              |  |              |   |              |
| Visibility  |  | .024         |  | -.022        |   | .082*        |
| Clarity   |  | .116**       |  | .139***      |   | .080*        |
| Acceptability   |  | .138**       |  | .145***      |   | .120***      |
| Consistency of administration   |  | .082*        |  | .096**       |   | .039         |
| Effectiveness of administration   |  | .130***      |  | .135***      |   | .085**       |
| Internal consistency  |  | .152***      |  | .090**       |   | .188***      |
| Intensity   |  | .062         |  | .055         |   | .085*        |
| <b>Number of important HRM targets</b>  |  | .040         |  |              |   |              |
| <b>Number of important attitudinal HRM targets</b>  |  |              |  | .057         |   |              |
| <b>Number of important availability and effectiveness HRM targets</b>   |  |              |  |              |   | -.092**      |
| <b>Adjusted r-square</b>  | .056   | .278         | .037   | .224         | .054  | .229         |

Note: Standardized coefficients; levels of significance: \* 5%; \*\* 1%; \*\*\* 0.1%.